

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re US Patent Application of)
Frank Morton)
Filed: Simultaneously herewith.)
Titled: ANTI-BACKLASH NUT ASSEMBLY)
FOR A LEAD SCREW) Date: March 30, 2006.

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Dear Sir:

Enclosed herewith are the following patent documents that are listed on attached Form PTO/SB/08A:

United States Patent No. 2,715,341, issued August 16, 1955, to Hogan, and titled BUMPER STOP, discloses a stop that dissipates rotational energy as friction operating through a relatively long distance.

United States Patent No. 4,131,031, issued December 26, 1978, to Erikson et al., and titled ANTI-BACKLASH NUT ASSEMBLY, discloses an anti-backlash nut that includes a nut that is axially split into first and second portions, both of which have an internal thread complementary to the external thread of the screw. The two portions of the nut are retained in the radial direction by a spacer, and a spring is used to apply biasing in the longitudinal direction to minimize backlash.

United States Patent No. 4,249,426, issued February 10, 1981, to Erikson et al., and titled ANTI-BACKLASH NUT HAVING LONGITUDINAL FLEXURAL MEMBERS WITH RAMPS THEREON AND MEANS TO APPLY AN AXIAL PRE-LOAD

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FORCE TO SAID RAMPS, discloses an anti-backlash nut having a tapered surface at one end thereof, a drive nut having a complementary tapered surface on the anti-backlash nut, and biasing means urging the tapered surfaces together.

United States Patent No. 4,353,264, issued October 12, 1982, to Erikson et al. and titled ANTI-BACKLASH NUT ASSEMBLY, discloses an anti-backlash nut includes a nut that is split into first and second portions, both of which have internal threads complementary to the external thread of the screw. The two portions of the nut are retained in the radial direction by a coaxial cylinder. A spacer means is mounted on the retainer means intermediate opposing surfaces of the nut portions and biased against at least one of the surfaces such that any gap which may occur between the thread of the screw and the thread of the nut will be closed by movement of the spacer.

United States Patent No. 4,433,590, issued February 28, 1984, to Benoit et al., and titled ANTI-BACKLASH NUT ASSEMBLY, discloses a anti-backlash nut that includes first and second nut portions each having an internal thread complementary to the external thread of the screw. A coil spring interconnected between the first and second nut portions applies torque thereto to eliminate backlash.

United States Patent No. 4,679,457, issued July 14, 1987, to Nishikawa et al., and titled BACK-LASH ELIMINATING MECHANISM IN SCREW-TYPE DRIVING DEVICE, discloses a back-lash eliminating mechanism in which a flexible nut member is disposed close to a screw member to eliminate back-lash at the thread engagement portion between the screw member and the nut member.

United States Patent No. 4,753,122, issued June 28, 1988, to Nishikawa et al., and titled SCREW-NUT TYPE MECHANISM, discloses a rotatable threaded shaft with a nut

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engaged with the screw shaft and a driven member secured to the nut. The nut has a axially tapered outer surface which is formed with external threads. The driven member has an internally threaded, axially tapered hole with which the nut is threadably engaged. A retaining plate is provided to hold the nut on the driven member to prevent rotation of the nut.

United States Patent No. 5,732,596, issued March 31, 1998, to Erikson et al., and titled ANTI-BACKLASH NUT ASSEMBLY, discloses an anti-backlash nut having internal threaded complementary to the threads of a screw. The nut has two portions movable as a unit and also rotatable relative to each other on the screw. Means are connected to the nut halves to induce their relative rotation on the screw in opposite directions and there are elastomeric friction means between the two portions to limit their relative rotational movement.

United States Patent No. 5,839,321, issued November 24, 1998, to Siemons, and titled BACKLASH COMPENSATING ASSEMBLY, discloses an anti-backlash nut having two portions engaged to prevent relative rotational motion but permit relative axial motion. A sleeve is disposed between the nut portions and the ends thereof abut annular rims formed on the nut portions. One end of the sleeve has a helical ramp that abuts a complementary shaped ramp formed on the annular rim of one nut portions, while the other end of the sleeve is flat and abuts a flat surface formed on the annular rim of the other nut portion. A torsion spring biases the sleeve rotatively with respect to the nut portions. Rotation of the sleeve causes the ramps on the sleeve to cam against the ramps on the one nut portion to move the nut portions axially away from each other, thereby

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forcing the threads to the nut portions into engagement with the threads of the lead screw, thus eliminating backlash.

United States Patent No. 6,240,798, issued June 5, 2001, to Erikson et al., and titled REINFORCED ANTI-BACKLASH NUT WITH GRADUATED THREAD DEPTH FINGERS, discloses an anti-backlash nut that has flexure members which are continuously biased inwardly against a lead screw by a force-applying sleeve which acts on ramps on the flexure member. Means on the longitudinal flexure members and the force applying sleeve impart rigidity to the longitudinal flexure members in a direction tangential to the longitudinal direction of movement of the nut.

Respectfully submitted,



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STATEMENT BY APPLICANT

(Use as many sheets as necessary)

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Complete If Known

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Application Number

Filing Date

First Named Inventor

Frank Morton

Art Unit

Examiner Name

Attorney Docket Number 226-147(US)

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 2,715,341	08-16-1955	Hogan	
		US- 4,131,031	12-26-1978	Erikson et al.	
		US- 4,249,426	02-10-1981	Erikson et al.	
		US- 4,353,264	10-12-1982	Erikson et al.	
		US- 4,433,590	02-28-1984	Benoit et al.	
		US- 4,679,457	07-14-1987	Nishikawa et al.	
		US- 4,753,122	06-28-1988	Nishikawa et al.	
		US- 5,732,596	03-31-1998	Erikson et al.	
		US- 5,839,321	11-24-1998	Siemons	
		US- 6,240,798	06-05-2001	Erikson et al.	
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ³
		Country Code ⁴ Number ⁴ Kind Code ⁵ (if known)				

Examiner Signature		Date Considered
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